

U.S.S.N. 10/600,799

REMARKS

Thorough examination and careful review of the application by the Examiner is noted and appreciated.

Claims 1-9 and 12-16 are pending in the application. Claims 1-9 and 12-16 stand rejected.

Claim Objections

Claim 1 is objected to for reciting the limitation "the chip".

Claim 1 has been amended to alleviate the Examiner's objection.

Claim Rejections Under 35 USC §112

Claims 1 and 9 are rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 has been amended to correct an ambiguity in step ②) by providing proper antecedent basis.

U.S.S.N. 10/600,799

The rejection of claims 1 and 9 under 35 USC §112, second paragraph, is respectfully traversed.

Claim Rejections Under 35 USC §102

Claims 1, 2 and 5 are rejected under 35 USC §102(e) as being anticipated by Kim et al '651 publication. It is contended that Kim et al discloses all aspects of the instant invention including the forming of a continuous solder bead 7 on the face of the cap with the metalization layer, and, the step of assembling the cap and the chip with the soldered bead positioned between and contacting the metalization layer and the area of the chip surrounding the active chip area.

The rejection of claims 1, 2 and 5 under 35 USC §102(e) based on Kim et al is respectfully traversed.

Independent claim 1 has been amended to more narrowly recite the process steps contained therein to define the present invention novel process. For instance, claim 1 now recites:

U.S.S.N. 10/600,799

- (C) forming a continuous bead of solder completely surrounding said active areas on said chip and **contacting said metallization layer**;
- (D) **removing said metallization layer not covered by said continuous bead of solder** and assembling the cap and the chip with the solder bead positioned between and contacting the metallization layer and the area on the chip surrounding the active chip areas."

The applicants respectfully submit that such process steps of forming a continuous bead of solder on the metallization layer and then removing the metallization layer not covered by the continuous bead of solder, is not taught or disclosed by Kim et al '651. To anticipate a claim of a patent, all the essential elements of the claims in question must be disclosed by the prior art reference. In the present case, Kim et al '651 does not disclose such process steps of forming the bead, removing the metallization layer not covered by the bead, and then assembling the cap and the chip together with the solder bead positioned between

U.S.S.N. 10/600,799

and contacting the metalization layer and the area on the chip surrounding the active chip areas.

The rejection of claims 1, 2 and 5 under 35 USC §102(e) based on Kim et al is respectfully traversed. A reconsideration for allowance of these claims is respectfully requested of the Examiner.

Claim Rejections Under 35 USC §103

Claims 3-4, 6-7, 12 and 15-16 are rejected under 35 USC §103(a) as being unpatentable over Kim et al and Lin et al '798 publication. It is contended that while Kim et al does not show the electroplating step by using a mask and cutting the wafer into individual die, such is disclosed by Lin et al.

The rejection of claims 3-4, 6-7, 12 and 15-16 under 35 USC §103(a) based on Kim et al and Lin et al is respectfully traversed.

Claims 3, 4, 6 and 7 depend on independent claim 1, which the applicant has clearly shown that, in its newly amended form, is not taught or disclosed by Kim et al. While the applicant does not dispute that Lin et al may have taught an electroplating method and

U.S.S.N. 10/600,799

a cutting method for the wafer, the applicant respectfully submits that the basic process of the present invention for forming a solder bead for providing a continuous, hermetic seal around active chip areas between a cap and a chip, is not taught or disclosed by Lin et al, Kim et al, either singularly or in combination thereof.

The rejection of claims 3-4, 6-7, 12 and 15-16 under 35 USC §103(a) based on Kim et al and Lin et al is respectfully traversed. A reconsideration for allowance of these claims is respectfully requested of the Examiner.

Claims 8-9 and 13-14 are rejected under 35 USC §103(a) as being unpatentable over Kim et al and Lin et al and further in view of Cho '562. It is contended that while Kim et al and Lin et al in combination does not show the use of spacers, such is taught by Cho in the use of a spacer for sealing a device.

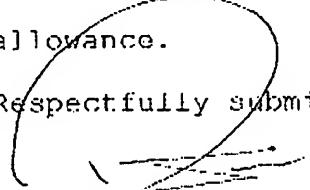
The rejection of claims 8-9 and 13-14 under 35 USC §103(a) based on Kim et al, Lin et al and Cho is respectfully traversed.

U.S.S.N. 10/600,799

Dependent claims 8 and 9 depend on independent claim 1, either directly or indirectly. While the applicant does not dispute that Cho '562 may have taught the use of spacers, the applicant respectfully submits that the basic process of the present invention, as identified in independent claims 1 and 12, are not taught or disclosed by Kim et al and Lin et al. The additional reference of Cho therefore does not provide any additional weight in a 3103(a) rejection of claims 8-9 and 13-14 based on Kim et al and Lin et al. A reconsideration for allowance of these claims is respectfully requested of the Examiner.

Based on the foregoing, the Applicants respectfully submit that all of the pending claims, i.e. claims 1-9 and 12-16, are now in condition for allowance. Such favorable action by the Examiner at an early date is respectfully solicited. In the event that the present invention is not in a condition for allowance for any other reasons, the Examiner is respectfully invited to call the Applicants' representative at his Bloomfield Hills, Michigan office at (248) 540-4040 such that necessary action may be taken to place the application in a condition for allowance.

Respectfully submitted,


Randy W. Tung (31,311)